TE

SWR# 31052

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Bayer Corporation
Facility Address: 8701 Park Place Blvd., Houston, TX 77017
Facility EPA ID #: TXD084972777

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

__X__ If yes - check here and continue with #2 below.

_____ If no - re-evaluate existing data, or

_____ if data are not available skip to #6 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	___	_X_	___	_____
Air (indoors)[2]	___	_X_	___	_____
Surface Soil (e.g., <2 ft)	___	_X_	___	_____
Surface Water	___	_X_	___	_____
Sediment	___	_X_	___	_____
Subsurf. Soil (e.g., >2 ft)	___	_X_	___	_____
Air (outdoors)	___	_X_	___	_____

__X___ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

_____ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

Soils: The Texas Natural Resource Conservation Commission (TNRCC) has approved the Report titled "Environmental Assessment and Standard 2 Closure of SWMUs and AOCs," dated August 31, 2000 which indicated that SWMUs and 4 AOCs were closed in accordance with the TNRCC Risk Reduction Standard (RRS) No. 2, pursuant to Title 30 Texas Administrative Code (TAC) Chapter 335 Subchapters A and S. Also, Alum Pond Settling Basin, North and South Boiler Blowdown Basins, Maleic Pond, Old Maleic Pond and Lake Hausenstein were closed in accordance with the TNRCC Risk Reduction Standard (RRS) No. 2, pursuant to Title 30 Texas Administrative Code (TAC) Chapter 335 Subchapters A and S.

Groundwater : The TNRCC has approved Bayers' proposal to remediate the groundwater, on a site wide basis rather than a unit by unit approach, in accordance with the TNRCC Risk Reduction Standard (RRS) No. 3, pursuant to Title 30 Texas Administrative Code (TAC) Chapter 335 Subchapters A and S. Also, the recent groundwater monitoring report indicates Migration of Contaminated Groundwater is Under Control.

A copy of this facility's database printout is attached, highlighting the reports which support the "YE" determination.

Footnotes:

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential **Human Receptors** (Under Current Conditions)						
"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	___	___	___	___			___
Air (indoors)	___	___	___				
Soil (surface, e.g., <2 ft)	___	___	___	___	___	___	___
Surface Water	___	___			___	___	___
Sediment	___	___			___	___	___
Soil (subsurface e.g., >2 ft)				___			___
Air (outdoors)	___	___	___	___	___		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___"). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

_____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s):_____

_____

_____

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

___X_ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **BAYER CORPORATION, HOUSTON** facility, EPA ID # **TXD084972777**, located at **8701 PARK PLACE BLVD., HOUSTON, TEXAS** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

IN - More information is needed to make a determination.

For "NO" or "IN" determination, expected date of "YE" determination _____

Completed by M. M. Padaki Date 08/06/2001
MURALI M. PADAKI
CORRECTIVE ACTION SPECIALIST

Supervisor Cathy Remmert Date 10/22/01
CATHY REMMERT
SUPERVISOR
TEXAS

Locations where References may be found:

If "YE" Code is assigned then attach a copy of database, highlight the reports which support "YE"determination.

Contact telephone and e-mail numbers

MURALI PADAKI
(512) 239-2356
MPADAKI@TNRCC.STATE.TX.US

YE confirmed 8/28/02 (Date is 10/22/01)

FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Query variables used to produce this report:

Search on: 31052
For: Finished Documents
With: No Date Range Restrictions From: Through:

Doc#	SWR / Fac ID	Facility	Date Rcd	Dated	Title	Type	Description	Due Date	Rev from*	Fin Date	PM**	Doc Comment
14662	31052	BAYER CORP	11/12/01	11/09/01	SWMUs AREAS OF CONCERN DEED CERTIFICATION	LTR-DEED/IC	RRS2	03/12/02		03/11/02	MPAD	
12948	31052	BAYER CORP	05/22/01	05/18/01	REVISED SECT 4.0 PROPOSED MONITORING PLN OF STAND 3 GW CLO PLN DOC	WP	RRS3	11/18/01		07/31/01	MPAD	
12456	31052	BAYER CORP	04/02/01	03/28/01	SUBMITTAL OF UPDATED PAGES FOR STD. 3 GRND. WTR.CLOSURE PLAN	LTR	RRS3	07/31/01		07/31/01	MPAD	
10372	31052	BAYER CORP	09/08/00	08/31/00	2 - RISK REDUCTION STANDARD 3 GW CLOSURE PLAN	WP	RRS3	03/07/01		07/31/01	MPAD	
10353	31052	BAYER CORP	09/08/00	08/31/00	2 COPIES OF ENVIRONMENTAL ASSESSMENT RPT	RPT	INV/ASSESS	01/06/01		08/01/01	MPAD	
9744	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - LAKE HAUSENSTEIN	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9743	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - MALEIC POND	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9741	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - OLD MALEIC POND	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9740	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - ALUM POND SETTLING BASIN	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9565	31052	BAYER CORP	07/05/00	06/06/00	DEED CERTIFICATION - BOILER BLOWDOWN	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
8403	31052	BAYER CORP	04/19/00	04/18/00	CORRECTED TEXT SUBMITTAL FOR SURFACE IMPOUNDMENT CLOSURE	WP	MISC	07/18/00		04/28/00	MPAD	
8650	31052	BAYER CORP	04/28/00	04/25/00	NOTICE OF INTENT (GRANDFATHERING)	LTR	NOTICE	06/15/00		05/22/00	MPAD	
6386	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT LAKE HAUSENSTEIN (OCTOBER 1999)	RPT	RRS2	04/30/00	02/02/00	04/28/00	MPAD	
6385	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT OLD MALEIC POND (OCTOBER 1999)	RPT	RRS2	04/30/00	02/02/00	04/28/00	MPAD	
6384	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT MALEIC POND (OCTOBER 1999)	RPT	RRS2	04/30/00	02/02/00	04/28/00	MPAD	
6383	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT NO&SO BOILER BLOWDOWN BASIN (OCT 99	RPT	RRS2	02/02/00		01/31/00	MPAD	
6382	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT ALUM POND SETTLING BASIN (OCT 1999)	RPT	RRS2	02/02/00		01/31/00	MPAD	
12426	31052	BAYER CORP	03/29/01	03/27/01	SUBMITTAL OF FEB. 2001 GW MONITORING RPT	RPT	NRN			04/04/01	MPAD	This is a voluntary submittal: C reviewing the Groundwater Corrective Action Proposal;
6396	31052	BAYER CORP	11/08/1999	11/01/1999	GPRA EI CHECKLISTS AND SCHEDULE	RPT	NRN			11/29/1999	MPAD	
6381	31052	BAYER CORP	11/05/1999	11/02/1999	GROUND WATER INVESTIGATION REPORT (SEPTEMBER 9, 1999)	RPT	NRN			03/02/00	MPAD	Meeting Held on 02/28/2000: B is going to submit a new propo GW cleanup;
6380	31052	BAYER CORP	11/05/1999	11/01/1999	GROUNDWATER INVESTIGATION REPORT (FEBRUARY 5, 1999)	RPT	NRN			03/02/00	MPAD	Meeting Held on 02/28/2000: B is going to submit a new propo GW cleanup;
3864	31052	BAYER CORP	04/09/1999	04/09/1999	RESOLUTION OF WASTEWATER ISSUE	LTR	NRN			04/29/1999	MPAD	
3697	31052	BAYER CORP	04/05/1999	03/30/1999	SURFACE IMPOUNDMENT CLOSURES	RPT	NRN			04/08/1999	MPAD	

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SWR# 31052

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: Bayer Corporation
Facility Address: 8701 Park Place Blvd., Houston, TX 77017
Facility EPA ID #: TXD084972777

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

__X__ If yes - check here and continue with #2 below.

_____ If no - re-evaluate existing data, or

_____ if data are not available, skip to #8 and enter"IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__X__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The TNRCC has approved Bayers' proposal to remediate the groundwater, on a site wide basis rather than a unit by unit approach, in accordance with the TNRCC Risk Reduction Standard (RRS) No. 3, pursuant to Title 30 Texas Administrative Code (TAC) Chapter 335 Subchapters A and S. Also, the recent groundwater monitoring report indicates Migration of Contaminated Groundwater is Under Control. The main Constituents of Concern (COCs) at the site are benzene, chlorobenzene, cis-1,2-dichloroethene, 1,2-dichloroethane, toluene, ethylbenzene, trichloroethene, chloroethane, and vinyl chloride. Bayer is trying to remediate the groundwater to TNRCC Risk Reduction Standard (RRS) No. 2, pursuant to Title 30 Texas Administrative Code (TAC) Chapter 335 Subchapters A and S.

A copy of this facility's database printout is attached, highlighting the reports which support the "YE" determination.

Footnotes:

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

__X__ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2]).

_____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): The recent groundwater monitoring report indicates Migration of Contaminated Groundwater has been stabilized.

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

__X___ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):_____

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be **"currently acceptable"** (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be **"currently acceptable"**) - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):_____

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

__X__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Bayer will collect groundwater monitoring / measurement data on a semi-annual basis and submit an annual report to verify that migration of contaminated groundwater is under control.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

__X__ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **BAYER CORPORATION, HOUSTON** facility, EPA ID # **TXD084972777**, located at **8701 PARK PLACE BLVD., HOUSTON, TEXAS**. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

_____ IN - More information is needed to make a determination.

For "NO" or "IN" determination, expected date of "YE" determination _____

Completed by _____ Date 08/27/2002
MURALI M. PADAKI
CORRECTIVE ACTION SPECIALIST

Supervisor _____ Date 8/28/02
CATHY REMMERT
SUPERVISOR
TEXAS

Locations where References may be found:

If "YE" Code is assigned then attach a copy of database, highlight the reports which support "YE"determination.

_____
_____

Contact telephone and e-mail numbers

MURALI PADAKI
(512) 239-2356
MPADAKI@TNRCC.STATE.TX.US

RCRAInfo updated 8/28/02

Query variables used to produce this report:

Search on: 31052
For: Finished Documents
With: No Date Range Restrictions From: Through:

Doc#	SWR / Fac ID	Facility	Date Rcd	Dated	Title	Type	Description	Due Date	Rev from*	Fin Date	PM**	Doc Comment
14662	31052	BAYER CORP	11/12/01	11/09/01	SWMUs AREAS OF CONCERN DEED CERTIFICATION	LTR-DEED/IC	RRS2	03/12/02		03/11/02	MPAD	
12948	31052	BAYER CORP	05/22/01	05/18/01	REVISED SECT 4.0 PROPOSED MONITORING PLN OF STAND 3 GW CLO PLN DOC	WP	RRS3	11/18/01		07/31/01	MPAD	
12456	31052	BAYER CORP	04/02/01	03/28/01	SUBMITTAL OF UPDATED PAGES FOR STD. 3 GRND. WTR.CLOSURE PLAN	LTR	RRS3	07/31/01		07/31/01	MPAD	
10372	31052	BAYER CORP	09/08/00	08/31/00	2 - RISK REDUCTION STANDARD 3 GW CLOSURE PLAN	WP	RRS3	03/07/01		07/31/01	MPAD	
10353	31052	BAYER CORP	09/08/00	08/31/00	2 COPIES OF ENVIRONMENTAL ASSESSMENT RPT	RPT	INV/ASSESS	01/06/01		08/01/01	MPAD	
9744	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - LAKE HAUSENSTEIN	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9743	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - MALEIC POND	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9741	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - OLD MALEIC POND	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9740	31052	BAYER CORP	07/05/00	06/27/00	DEED CERTIFICATION - ALUM POND SETTLING BASIN	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
9565	31052	BAYER CORP	07/05/00	06/06/00	DEED CERTIFICATION - BOILER BLOWDOWN	LTR-DEED/IC	RRS2	11/02/00		07/27/00	MPAD	
8403	31052	BAYER CORP	04/19/00	04/18/00	CORRECTED TEXT SUBMITTAL FOR SURFACE IMPOUNDMENT CLOSURE	WP	MISC	07/18/00		04/28/00	MPAD	
8650	31052	BAYER CORP	04/28/00	04/25/00	NOTICE OF INTENT (GRANDFATHERING)	LTR	NOTICE	06/15/00		05/22/00	MPAD	
6386	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT LAKE HAUSENSTEIN (OCTOBER 1999)	RPT	RRS2	04/30/00	02/02/00	04/28/00	MPAD	
6385	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT OLD MALEIC POND (OCTOBER 1999)	RPT	RRS2	04/30/00	02/02/00	04/28/00	MPAD	
6384	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT MALEIC POND (OCTOBER 1999)	RPT	RRS2	04/30/00	02/02/00	04/28/00	MPAD	
6383	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT NO&SO BOILER BLOWDOWN BASIN (OCT 99	RPT	RRS2	02/02/00		01/31/00	MPAD	
6382	31052	BAYER CORP	11/04/1999	10/28/1999	SURFACE IMPOUNDMENT CLOSURE REPORT ALUM POND SETTLING BASIN (OCT 1999)	RPT	RRS2	02/02/00		01/31/00	MPAD	
12426	31052	BAYER CORP	03/29/01	03/27/01	SUBMITTAL OF FEB. 2001 GW MONITORING RPT	RPT	NRN			04/04/01	MPAD	This is a voluntary submittal: C reviewing the Groundwater Corrective Action Proposal;
6396	31052	BAYER CORP	11/08/1999	11/01/1999	GPRA EI CHECKLISTS AND SCHEDULE	RPT	NRN			11/29/1999	MPAD	
6381	31052	BAYER CORP	11/05/1999	11/02/1999	GROUND WATER INVESTIGATION REPORT (SEPTEMBER 9, 1999)	RPT	NRN			03/02/00	MPAD	Meeting Held on 02/28/2000: B is going to submit a new propo GW cleanup;
6380	31052	BAYER CORP	11/05/1999	11/01/1999	GROUNDWATER INVESTIGATION REPORT (FEBRUARY 5, 1999)	RPT	NRN			03/02/00	MPAD	Meeting Held on 02/28/2000: B is going to submit a new propo GW cleanup;
3864	31052	BAYER CORP	04/09/1999	04/09/1999	RESOLUTION OF WASTEWATER ISSUE	LTR	NRN			04/29/1999	MPAD	
3697	31052	BAYER CORP	04/05/1999	03/30/1999	SURFACE IMPOUNDMENT CLOSURES	RPT	NRN			04/08/1999	MPAD	

HZ/RC/TE Entered 2/6/08

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Central Records Files (MC - 199) **Date:** February 6, 2008

Lanxess Corp. (former Bayer Corp.)
Solid Waste Registration No. 31052

Thru: Jim Sher, Manager
Environmental Cleanup Section I, Remediation Division

From: Eleanor T. Wehner, CA Program Manager
Remediation Division

Subject: Documentation of achievement of facility-wide remedy selection and remedy construction complete (CA-400 and CA-550)
EPA ID No. TXD084972777
TCEQ SWR No. 31052

Based on a file review, **remedies have been selected for all units and areas of concern (AOCs) subject to RCRA/HSWA corrective action at the above-referenced facility**. The RCRA milestone of facility-wide Remedy Decision (CA400)[1] has been achieved, based on the approval of the proposed remedy for addressing the closure of facility-wide soil and groundwater contamination to Risk Reduction Standard No. 2 Standards associated with releases from the units listed below on October 13, 2006. Remedies had previously been selected for all units and AOCs subject to corrective action at the facility.

Based on site characterization activities, **construction of physical remedies is not needed.** The milestone of facility-wide "No Remedy Construction Needed" (CA550NR)[2] has been met. This determination is based on the approval of no further action and deed recordation of soil and groundwater contamination associated with releases from the units/AOCas listed below on April 11, ,2007. Remedy decisions of no further action had previously been approved for all other units and AOCs subject to corrective action at the facility.

The units and AOCs considered in this evaluation include

RFI Units & AOCs subject to Corrective Action	Remedy Decision[1]	Approval of Remedy Construction/ Completion[2]
South Boiler Blowdown Pond	10/13/2006[3]	4/11/2007[3]
IHW AOCs	10/13/2006[3]	4/11/2007[3]

Old Maleic Pond	10/13/2006[3]	4/11/2007[3]
North Boiler Blowdown Pond	10/13/2006[3]	4/11/2007[3]
Maleic Pond	10/13/2006[3]	4/11/2007[3]
Lake Hausenstein	10/13/2006[3]	4/11/2007[3]
Alum Settling Basins	10/13/2006[3]	4/11/2007[3]
Aeration Basins	10/13/2006[3]	4/11/2007[3]

RCRA Regulated, Permitted Units subject to Compliance or Corrective Action Monitoring

NA

Interim Status or Unauthorized Units

Aeration Basin (series 388; 3 units)	6/18/1987[3]	10/14/1999[3]

To date, no additional units subject to corrective action requirements have been identified at the facility.

Eleanor T Wehner for M. Padalki

Eleanor T. Wehner

cc: Waste Program Manager, TCEQ Region 12 Office, Houston

Notes:

[1] "The event when the state or EPA formally selects a remedy designed to meet RCRA Corrective Action long-term goals of protection of human health and the environment. This event code also applies when no further corrective action is required because stabilization measure(s) have already been implemented or because the site characterization has demonstrated the attainment of the long-term RCRA Corrective Action goals." See RCRAInfo Data Dictionary for complete event code definition.

Each unit and AOC must have an approved remedy for this event code to apply facility-wide.

2 "The event when the state or EPA acknowledges in writing that the RCRA facility has completed construction of a facility's remedy that was designed to achieve long-term protection of human health and the environment, and that the remedy is fully functional as designed, whether or not final cleanup levels or other requirements have been achieved. Remedy construction may also acknowledge the event where no remedy is constructed." See RCRAInfo Data Dictionary for complete event code definition. Each unit and AOC must have an approval of the remedy construction or approval of the decision that no physical construction is needed for this event code to apply facility-wide.

3 Date confirmed through TCEQ correspondence review.

4 Date obtained from RCRAInfo database.

5 Date obtained from facility correspondence.

6 Date obtained from TCEQ database.